

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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November 23, 2005

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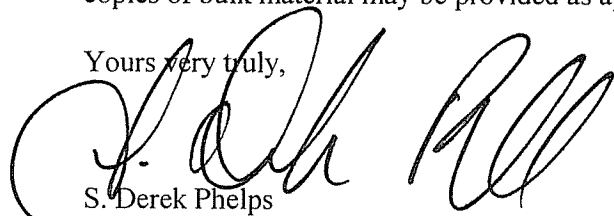
RE: **LIFE-CYCLE 2006** – Connecticut Siting Council Investigation into the Life-Cycle Costs of Electric Transmission Lines.

Dear Attorney Gibelli:

The Connecticut Siting Council (Council) requests your responses to the enclosed questions no later than December 12, 2005. To help expedite the Council's review, please file individual responses as soon as they are available.

Please forward an original and 20 copies to this office. In accordance with the State Solid Waste Management Plan, the Council is requesting that all filings be submitted on recyclable paper, primarily regular weight white office paper. Please avoid using heavy stock paper, colored paper, and metal or plastic binders and separators. A list of parties and intervenors is enclosed. Fewer copies of bulk material may be provided as appropriate.

Yours very truly,



S. Derek Phelps
Executive Director

SDP/MP

c: Council Members
Parties and Intervenors
Chris Bernard, Northeast Utilities Service Company

LIFE-CYCLE 2006
CL&P Pre-Hearing Interrogatories, Set One

1. Provide all information documenting CL&P's costs for operation and maintenance of existing transmission lines. Where possible, please break these down by type of O&M expense, using cost categories that CL&P routinely uses. Please provide on a line-by-line basis, or by voltage category and type of line.
2. Provide the overhead transmission line capital costs (\$/mile) that CL&P uses to compare alternative single circuit line structures and designs for 115 kV and 345 kV lines of the following types:
 - Wood pole
 - Steel pole
 - Steel towers

If possible, please break these costs into the following categories:

- Conductors
- Towers/supporting structures
- Land costs
- Insulation costs
- Other (please specify)

If the costs are not available for all of these categories, please provide them in as much detail as possible for the categories CL&P routinely uses.

3. Provide the same information requested in the previous question for double circuit structures and lines.
4. Provide the underground transmission line capital costs (\$/mile) that CL&P uses to compare alternative 115 kV and 345 kV lines of the following types:
 - High pressure fluid filled (HPFF)
 - Cross-linked polyethylene (XLPE)

If possible, break these costs into the following categories:

- Cable costs
- Piping and associated supporting structures
- Conduit costs
- Other supporting structures
- Land costs
- Installation costs
- Other (please specify)

If the costs are not available for all of these categories, provide them in as much detail as possible for the categories CL&P routinely uses.

5. The 2001 Acres Report states that "Figures supplied by the Connecticut Light and Power Company indicate that their operation and maintenance (O&M) costs for overhead (115-kV transmission lines) ranged from \$1,474 to \$1,862 per circuit-mile over the 3-year period 1996-1998 (inclusive). These numbers compare with the range \$1,300 - \$1,900 per circuit-mile indicated for year 10 in the 1996 study. CL&P have not been able to

breakdown the O&M costs for underground line, but they estimate that the figures in the 1996 study remain realistic.” Estimate the O&M costs per circuit-mile for overhead and underground 115-kV and 345-kV transmission as applicable for the years 1999 through 2004.

6. In the May 2001 Life-Cycle Report by Acres International Corp. (2001 Acres Report), the Executive Summary contains the following statement regarding wood pole preservatives, “There is a possibility that the most commonly used preservative, penta (pentachlorophenol), may be banned by the EPA. If this occurs, then more costly steel poles may have to be used as a replacement for Western Red Cedar poles pending the development of a substitute acceptable preservative.”
 - a) Has Penta been banned by the EPA?
 - b) If yes, what replacement preservative is currently being used?
 - c) How might the life-cycle costs be affected for wood structures due to the newer preservative if available?
7. The 2001 Acres Report also states that, “Transmission lines are built to provide safe reliable performance over a life of 35 to 40 years.” Is that estimated lifespan still used for transmission life-cost analysis?
8. The July 1996 Life-Cycle Report by Acres International Corp. (1996 Acres Report) on page C-29, states that (for 115-kV transmission) the following life expectancies exist for the following transmission lines:
 - Wood Pole 40 years
 - Steel Pole 60 years
 - Underground Cable 35 to 40 years
 - a) Does CL&P agree with these life expectancies?
 - b) If not, what typical life expectancies would CL&P use for each of these transmission types?
 - c) Please provide similar life expectancies for 345 kV transmission lines of the same types.
 - d) Please provide the life expectancies for both 115 kV and 345 kV underground lines using both HPFF and XLPE cable.
9. Are polymer insulators the preferred type of insulators? Have they largely replaced porcelain or glass insulators?
10. Describe how leak prevention and containment measures used on high-pressure fluid-filled cable systems could impact life-cycle costs.
11. Has CL&P researched or evaluated the use of composite conductors for transmission lines to increase line capacity? If so, what is estimated life cycle cost impact? Please break into first cost and ongoing cost elements.
12. Has CL&P experienced, in the last five years, issues with construction or maintenance of transmission lines in locations that required special processes or procedures due to environmental sensitivity? If so, please describe the situations and the cost impacts.

13. ISO-New England (ISO-NE) has issued planning and operating standards for design and operation of transmission facilities. One standard prescribes transmission line ratings for normal conditions, short-term emergency and long-term emergency conditions. Does CL&P expect the standards to impact transmission line life-cycle costs, and if so, to what extent?
14. Has CL&P identified other ISO-NE policies or operating procedures that are anticipated to impact transmission line life-cycle costs? If so, what are they and what is the anticipated impact?
15. Under what conditions would the Connecticut Light and Power Company (CL&P) consider using high voltage direct current (HVDC) lines for long-distance power transfers? How would the life cycle costs of HVDC lines compare to alternating current (AC) transmission lines?